



Work-Related Lung Diseases

WHAT IS THE HEALTH ISSUE?

- From 1968 through 2000, pneumoconiosis (lung disease caused by inhalation of dusts) was an underlying or contributing cause of nearly 125,000 deaths in the United States, including over 2,860 in 2000.
- Among adults, 20-30 percent of asthma is caused or aggravated by work exposures.
- An estimated 15 percent of chronic obstructive pulmonary disease (COPD) -- the Nation's fourth leading cause of death -- is work-related.
- The estimated annual cost of occupational COPD is \$5 billion.

WHAT HAS CDC ACCOMPLISHED?

CDC conducts surveillance, research, and service aimed at the prevention and elimination of occupational respiratory diseases. The prevention of COPD is an important public health issue in the U.S. A CDC study estimated that nearly 20 percent of COPD among working adults is occupationally related and identified industries and occupations with a higher-than-expected prevalence of COPD. Increased risk for COPD was identified in the rubber, plastics, and leather manufacturing industries, the textile mill products manufacturing industry, the food products manufacturing industry, agriculture, and construction. COPD was substantially more prevalent in blue-collar industry sectors than in white-collar industry sectors. The study results also suggest an increased risk in other industries, such as utilities and office building services that have not previously been associated with a risk for COPD.

Example of Program in Action:

An occupational physician recognized a cluster of eight former microwave popcorn factory workers who had severe, fixed airway obstruction, four of whom were on lung transplant lists. CDC conducted a systematic evaluation of the factory which revealed striking excesses of lung function abnormalities in the current workforce. The evaluation also revealed that higher exposures to artificial butter flavoring agents were related to chest disease, suggestive of a previously unrecognized occupational cause of a rare lung disease -- bronchiolitis obliterans syndrome. CDC then conducted animal studies which provided biologic plausibility to the epidemiologic association of severe lung disease with flavoring exposures. These results led CDC to make specific recommendations for improvement to the ventilation within the factory, which were voluntarily implemented. CDC's response to sentinel cases such as this stimulates research on new causes of occupational lung disease, and encourages training of and information dissemination to workers, business, other governmental agencies, and the scientific community.

WHAT ARE THE NEXT STEPS?

CDC must continue to identify and promote control of workplace exposures that cause debilitating and deadly respiratory diseases. Epidemiological research is needed to provide the scientific basis for preventing work-related COPD. CDC will evaluate the risks and potential preventive interventions for workers in the food processing industry (i.e., microwave popcorn production workers) who may be routinely exposed to substances causing bronchiolitis obliterans, a severe form of COPD. In addition, CDC has an aggressive program of research to prevent work-related asthma, including asthma related to nonindustrial building air quality.